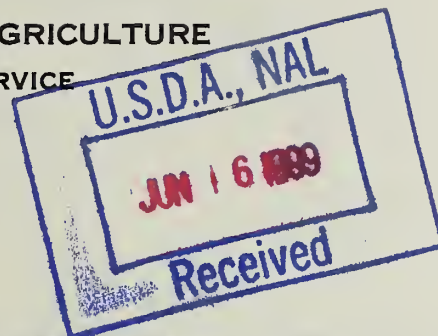


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UNITED STATES DEPARTMENT OF AGRICULTURE
CONSUMER AND MARKETING SERVICE
WASHINGTON, D.C.



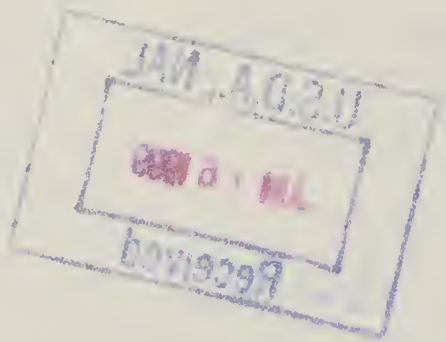
UNITED STATES
STANDARDS
for grades of
CANNED
GREEN BEANS
and
CANNED WAX BEANS



EFFECTIVE FEBRUARY 13, 1972

Seventh Issue
As Amended

These standards supersede the standards
which have been in effect since
July 23, 1961



This is the seventh issue, as amended, of the United States Standards for Grades of Canned Green Beans and Canned Wax Beans. These amended standards are issued by the Department after careful consideration of all data and views submitted.

An amendment, published in the Federal Register on January 14, 1972 (37 F.R. 587), to become effective February 13, 1972, reduces the recommended minimum drained weight for No. 10 cans of whole green or wax beans from 59.0 to 57.5 ounces.

This grade standard is issued under authority of the Agricultural Marketing Act of 1946 which provides for the issuance of official U.S. grades to designate different levels of quality for the voluntary use of producers, buyers, and consumers. Official grading service is also provided under this Act upon request of the applicant and upon payment of a fee to cover the cost of the service.

As is the case of other standards for processed fruits and vegetables, these standards are designed to serve as a convenient basis for sales, for establishing quality control programs, and for determining loan values. They will also serve as a basis for the inspection of this commodity by Federal inspection service, which is available for the inspection of other processed products as well.

These standards are issued by the Department after careful consideration of all data and views submitted and the Department welcomes suggestions which might aid in improving these standards in future revisions. Comments may be submitted to, and copies of these standards obtained from:

Chief, Processed Products Standardization and Inspection Branch
Fruit and Vegetable Division, C&MS
U.S. Department of Agriculture
Washington, D. C. 20250

UNITED STATES STANDARDS FOR GRADES OF CANNED GREEN BEANS AND CANNED WAX BEANS¹

Effective February 13, 1972

IDENTITY, STYLES, AND GRADES

Sec.

- 52.441 Identity.
- 52.442 Styles of canned beans.
- 52.443 Grades of canned beans.

FILL OF CONTAINER AND DRAINED WEIGHTS

- 52.444 Recommended fill of container.
- 52.445 Recommended drained weight.
- 52.446 Compliance with recommended drained weights.

TYPES AND SIZES

- 52.447 Types of canned beans.
- 52.448 Sizes of canned beans.

FACTORS OF QUALITY

- 52.449 Ascertaining the grade of a sample unit.
- 52.450 Ascertaining the rating for the factors which are scored.
- 52.451 Clearness of liquor.
- 52.452 Color.
- 52.453 Absence of defects.
- 52.454 Character.

LOT INSPECTION AND CERTIFICATION

- 52.455 Ascertaining the grade of a lot.

SCORE SHEET

- 52.456 Score sheet for canned green beans or canned wax beans.

AUTHORITY: §§ 52.441 to 52.456 issued under secs. 202-208, 60 Stat. 1087, as amended; 7 U.S.C. 1621-1627.

IDENTITY, STYLES, AND GRADES

§ 52.441 Identity.

(a) "Canned green beans" means canned green beans as defined in the definitions and standard of identity for

canned green beans (21 CFR 51.10), issued pursuant to the Federal Food, Drug, and Cosmetic Act.

(b) "Canned wax beans" means canned wax beans as defined in the definitions and standard of identity for canned wax beans (21 CFR 51.15), issued pursuant to the Federal Food, Drug, and Cosmetic Act.

(c) "Canned beans" or "beans" as hereinafter referred to in this subpart means canned green beans or canned wax beans.

(d) "Unit" means an individual green bean or wax bean, or portion of either, in canned beans.

§ 52.442 Styles of canned beans.

(a) "Whole" means canned beans that consist of whole pods, including pods which after removal of either or both ends are less than $2\frac{3}{4}$ inches in length, or transversely cut pods not less than $2\frac{3}{4}$ inches in length and, except for "vertical pack" or asparagus style, are not arranged in any definite position in the container.

(b) "Whole vertical pack" means canned beans that are "whole" and are packed parallel to the sides of the container.

(c) "Whole asparagus style" means canned beans that are "whole" and consist of pods that are cut at both ends, are of substantially equal lengths, and are packed parallel to the sides of the container.

(d) "Sliced lengthwise" or "French style" means canned beans consisting of pods that are sliced lengthwise.

(e) "Cut" or "cuts" means canned beans consisting of pods that are cut transversely into pieces less than $2\frac{3}{4}$

¹ Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act or with applicable state laws and regulations.

inches, but not less than $\frac{3}{4}$ inch, in length, and may contain shorter end pieces which result from cutting.

(f) "Short cut" or "short cuts" means canned beans consisting of pieces of pods of which not less than 75 percent are less than $\frac{3}{4}$ inch in length and not more than 1 percent are more than $1\frac{1}{4}$ inches in length.

(g) "Mixed" or "mixture" means a mixture of two or more of the following styles of canned beans: "whole"; "sliced lengthwise"; "cuts"; or "short cuts".

§ 52.443 Grades of canned beans.

(a) "U.S. Grade A" (or "U.S. Fancy") is the quality of canned green beans or canned wax beans that possess similar varietal characteristics; possess a normal flavor and odor; are practically free from defects for reasons other than damaged by mechanical injury; possess a good character; and are of such quality with respect to clearness of liquor, uniformity of color, and absence of defects as to score not less than 90 points when scored in accordance with the scoring system outlined in this subpart.

(b) "U.S. Grade B" (or "U.S. Extra Standard") is the quality of canned green beans or canned wax beans that possess similar varietal characteristics; possess a normal flavor and odor; possess a reasonably uniform typical color; are reasonably free from defects; possess a reasonably good character; and are of such quality with respect to clearness of liquor as to score not less than 80 points when scored in accordance with the scoring system outlined in this subpart.

(c) "U.S. Grade C" (or "U.S. Standard") is the quality of canned green beans or canned wax beans that possess similar varietal characteristics; possess a normal flavor and odor; possess a fairly good liquor; possess a fairly uniform typical color; are fairly free from defects; possess a fairly good character; and score not less than 70 points when scored in accordance with the scoring system outlined in this subpart.

(d) "Substandard" is the quality of canned beans that fail to meet the requirements of U.S. Grade C and may or may not be "Below Standard in Quality—Good Food—Not High Grade".

FILL OF CONTAINER AND DRAINED WEIGHTS

§ 52.444 Recommended fill of container.

The recommended fill of container is not incorporated in the grades of the finished product since fill of container, as such, is not a factor of quality for the purpose of these grades. It is recommended that each container of canned beans be filled with beans as full as practicable without impairment of quality and that the product and packing medium occupy not less than 90 percent of the total capacity of the container.

§ 52.445 Recommended drained weight.

The drained weight recommendations in Table No. I of this section are not incorporated in the grades of the finished product since drained weight, as such, is not a factor of quality for the purpose of these grades. The drained weight of beans is determined by emptying the contents of the container upon a United States Standard No. 8 circular sieve of proper diameter containing 8 meshes to the inch ($0.0937\text{-inch} \pm 3\%$, square openings) so as to distribute the product evenly, inclining the sieve slightly to facilitate drainage, and allowing to drain for 2 minutes. A sieve 8 inches in diameter is used for No. $2\frac{1}{2}$ size cans (401 x 411) and smaller sizes, and a sieve 12 inches in diameter is used for containers larger than the No. $2\frac{1}{2}$ size can.

§ 52.446 Compliance with recommended drained weights.

Compliance with the recommended drained weights for canned beans in Table I is determined by averaging the drained weights from all the containers in the sample which is representative of a specific lot and such lot is considered as meeting the recommendations if the following criteria are met:

(a) The average of the drained weights from all of the containers in the sample meets the recommended minimum drained weight for the applicable style;

(b) The drained weights from the containers which do not meet the recommended minimum drained weight are within the range of variability of good commercial practice.

TABLE I—RECOMMENDED MINIMUM DRAINED WEIGHTS FOR CANNED GREEN BEANS AND WAX BEANS

Container size or designation	Whole	Whole vertical pack; and whole asparagus style	Short cuts; and cuts, less than 1½ inches	Cuts—1½ inches and longer	Mixed—Cuts and short cuts	Sliced lengthwise or French style
	Ounces	Ounces	Ounces	Ounces	Ounces	Ounces
8 Z tall.....	4.0	4.6	4.5	4.1	4.5	4.1
8 oz. glass.....	3.9	4.5	4.4	4.0	4.4	4.0
No. 1 (picnic).....	5.6	6.1	6.0	5.7	6.0	5.7
No. 300.....	8.2	9.2	8.5	8.2	8.5	8.2
No. 300 glass.....	8.2	9.2	8.5	8.2	8.5	8.2
No. 1 tall.....	8.5	9.5	9.2	8.7	9.2	8.7
No. 303.....	8.5	9.5	9.2	8.7	9.2	8.7
No. 303 glass.....	9.0	10.0	9.7	9.2	9.7	9.2
No. 2.....	10.5	11.9	11.2	11.0	11.2	11.0
No. 2½.....	16.0	17.0	16.4	16.2	16.4	16.2
No. 2½ glass.....	15.8	16.8	16.2	16.0	16.2	16.0
No. 3 cylinder.....	26.6	-----	27.3	27.0	27.3	27.0
No. 10.....	57.5	-----	63.0	60.0	63.0	59.0

TYPES AND SIZES

§ 52.447 Types of canned beans.

The type of canned beans is not incorporated in the grades of the finished product, since the type of canned beans is not a factor of quality for the purpose of these grades. The type of canned beans is based upon the relationship of the width and thickness measurement and is described as "round-type" or "flat-type" as follows:

(a) "Round-type" are canned beans having a width not greater than 1½ times the thickness of the bean.

(b) "Flat-type" are canned beans having a width greater than 1½ times the thickness of the bean.

§ 52.448 Sizes of canned beans.

The size of beans is not a factor of quality of canned beans for the purpose of these grades. The size of a whole, cut, or short cut bean is determined by measuring the thickness at the shorter diameter of the bean transversely to the long axis at the thickest portion of the pod. The designations of the various sizes of round type and flat type beans are shown in Table No. II-A and II-B of this subpart.

TABLE II-A—SIZES OF ROUND-TYPE BEANS

Number designation	Word designation		Measurement of thickness in 64ths of one inch
	Whole beans	Cut or short cut beans	
Size 1.....	Tiny.....	Small.....	Less than 14½.
Size 2.....	Small.....	do.....	14½, but not including, 18½.
Size 3.....	Medium.....	do.....	18½, but not including, 21.
Size 4.....	Medium large.....	Medium.....	21, but not including, 24.
Size 5.....	Large.....	Large.....	24, but not including, 27.
Size 6.....	Extra large.....	Extra large.....	27 or more.

TABLE II-B—SIZES OF FLAT-TYPE BEANS

Number designation	Word designation		Measurement of thickness in 64ths of an inch
	Whole beans	Cut or short cut beans	
Size 2.....	Small.....	Small.....	Less than 14½.
Size 3.....	Medium.....	Medium.....	14½, but not including, 18½.
Size 4.....	Medium large.....	Medium large.....	18½, but not including, 21.
Size 5.....	Large.....	Large.....	21, but not including, 24.
Size 6.....	Extra large.....	Extra large.....	24 or more.

FACTORS OF QUALITY

§ 52.449 Ascertaining the grade of a sample unit.

(a) *General.* In addition to considering other requirements outlined in the standards, the following quality factors are evaluated in ascertaining the grade of the product:

(1) *Factors not rated by score points.*

(i) **Flavor and odor:** "Normal flavor and normal odor" means that the canned beans are free from objectionable flavors and objectionable odors of any kind.

(ii) **Varietal characteristics.**

(2) *Factors rated by score points.*

The relative importance of each factor which is scored is expressed numerically on the scale of 100. The maximum number of points that may be given each factor is:

Factors:	Points
Clearness of liquor.....	10
Color	15
Absence of defects.....	35
Character	40
Total score.....	100

§ 52.450 Ascertaining the rating for the factors which are scored.

The essential variations within each factor which is scored are so described that the value may be ascertained for each factor and expressed numerically. The numerical range within each factor which is scored is inclusive (for example, "31 to 35 points" means 31, 32, 33, 34, or 35 points).

§ 52.451 Clearness of liquor.

(a) *(A) classification.* Canned beans that possess a practically clear liquor may be given a score of 9 or 10 points. "Practically clear liquor" means that the liquor may possess a slight tint of yellow-green to green color and that not more than a trace of suspended material and sediment is present.

(b) *(B) classification.* If the canned beans possess a reasonably clear liquor, a score of 8 points may be given. "Reasonably clear liquor" means that the liquor may be cloudy and contain a small quantity of sediment.

(c) *(C) classification.* If the canned beans possess a fairly good liquor, a score

of 7 points may be given. "Fairly good liquor" means that the liquor may be dull in color, but not off color; may be cloudy; or may possess a noticeable accumulation of sediment.

(d) *(SStd) classification.* Canned beans that possess a liquor that is definitely off color for any reason, is excessively cloudy, or contains a seriously objectionable quantity of sediment may be given a score of 0 to 6 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§ 52.452 Color.

(a) *(A) classification.* Canned beans that possess a practically uniform bright typical color may be given a score of 14 or 15 points. "Practically uniform bright typical color" means that the canned beans possess a color that is bright and typical of very young and tender green beans or wax beans, as the case may be, of similar varietal characteristics with not more than 5 percent, by count, of units which vary markedly from this typical color.

(b) *(B) classification.* If the canned beans possess a reasonably uniform typical color, a score of 12 or 13 points may be given. "Reasonably uniform typical color" means that the canned beans possess a color that is typical of young and reasonably tender green beans or wax beans, as the case may be, of similar varietal characteristics with not more than 10 percent, by count, of units which vary markedly from this typical color.

(c) *(C) classification.* Canned beans that possess a fairly uniform typical color may be given a score of 10 or 11 points. Canned beans that fall into this classification shall not be graded above U.S. Grade C, regardless of the total score for the product (this is a limiting rule). "Fairly uniform typical color" means that the canned beans possess a color that is typical of nearly mature and fairly tender green beans or wax beans, as the case may be, of similar varietal characteristics with not more than 15 percent, by count, of units which vary markedly from this typical color.

(d) (*SStd*) classification. Canned beans that are definitely off color or fail to meet the requirements of paragraph (c) of this section may be given a score of 0 to 9 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§ 52.453 Absence of defects.

(a) *General*. The factor of absence of defects refers to the degree of freedom from blemished and seriously blemished units; from unstemmed units, detached stems, leaves, extraneous vegetable matter; or split units, loose seeds and pieces of seed, small pieces of pod, and ragged-cut units or units damaged by mechanical injury in the applicable styles; and any other defects not specifically defined which affect the appearance or edibility of the units or the product.

(b) *Definitions of defects or defective units*. (1) "Blemished" or "blemished unit" means blemished by scars, pathological injury, insect injury, or other means in which the aggregate area affected exceeds the area of a circle $\frac{1}{8}$ inch in diameter or the appearance or eating quality of the unit is materially affected.

(2) "Seriously blemished" or "seriously blemished unit" means blemished to such an extent that the appearance or eating quality of the unit is seriously affected.

(3) "Long stems" mean attached or detached stems which are longer than $\frac{1}{2}$ inch.

(4) "Extraneous vegetable matter" means leaves and other similar vegetable matter that is harmless, and includes "detached stems", when so indicated.

(5) "Split unit" means a whole bean, cut, or short cut unit, that is split into two parts.

(6) "Small pieces of pods" means pieces of pods less than $\frac{1}{2}$ inch in length.

(7) "Ragged-cut unit" means a section of a pod that has a very ragged edge, or a section of a pod that is partially cut that seriously affects the appearance of the pod.

(8) "Damaged by mechanical injury" means broken or damaged to such an ex-

tent that the appearance or eating quality of the unit is seriously affected.

(c) (A) classification. Canned beans that are practically free from defects may be given a score of 31 to 35 points. "Practically free from defects" means that:

(1) The limits for allowable defects or defective units in the applicable styles do not exceed the maximum limits for (A) classification in Table III of this subpart; and

(2) Notwithstanding the applicable allowances in Table III the defects or defective units (whether or not specifically defined), individually and collectively, do not materially affect the appearance or edibility of the product.

(d) (B) classification. If the canned beans are reasonably free from defects, a score of 28 to 30 points may be given. Canned beans that fall into this classification for reasons other than damage by mechanical injury shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a partial limiting rule). "Reasonably free from defects" means that:

(1) The limits for allowable defects or defective units in the applicable styles do not exceed the maximum limits for (B) classification in Table III of this subpart; and

(2) Notwithstanding the applicable allowances in Table III the defects or defective units (whether or not specifically defined), individually and collectively, do not seriously affect the appearance or edibility of the product.

(e) (C) classification. If the canned beans are fairly free from defects, a score of 25 to 27 points may be given. Canned beans that fall into this classification shall not be graded above U.S. Grade C, regardless of the total score for the product (this is a limiting rule). "Fairly free from defects" means that the limits for allowable defects or defective units in the applicable styles do not exceed the maximum limits for (C) classification in Table III of this subpart.

(f) (*SStd*) classification. Canned beans that fail to meet the requirements of paragraph (e) of this section may be given a score of 0 to 24 points and shall not be graded above Substandard, regardless of the total score for the prod-

uct (this is a limiting rule); and may also be "Below Standard in Quality—Good Food—Not High Grade" for the following applicable reasons:

Excessive number very short pieces;
Excessive number blemished units;
Excessive number unstemmed units;
Excessive foreign material;
Excessive loose seeds and pieces of seeds.

TABLE III—MAXIMUM ALLOWANCES FOR DEFECTS OR DEFECTIVE UNITS IN CANNED GREEN OR CANNED WAX BEANS

	(A) Classification	(B) Classification	(C) Classification
All styles: Total—all defects other than loose seeds and seed pieces. Blemished; and Seriously blemished.	10% of drained weight...	15% of drained weight...	20% of drained weight.
Unstemmed units and Detached stems.	2% total, but no more than 1%, by count, seriously.	4% total, but no more than 2%, by count, seriously.	8% total, ¹ but no more than 4%, by count, seriously.
Leaves and other extraneous vegetable matter.	4 total, but no more than 2 long stems, per 12 ozs. drained weight.	5 total, but no more than 3 long stems, per 12 ozs. drained weight.	Unstemmed units: 6 total, but no more than 4 long stems, per 12 ozs. drained weight.
	1 piece per 12 ozs. drained weight.	2 pieces per 12 ozs. drained weight.	Including detached stems: 0.6 ozs. per 60 ozs. drained weight. ¹
All styles, except as indicated otherwise: Loose seeds and pieces (except in Sliced Lengthwise style). Small pieces of pod (in cuts; and mixed—cut and short cut styles only):	3% of drained weight....	4% of drained weight....	5% of drained weight. ¹
(a) 240 count or less per 12 ozs. drained weight.	40 pieces per 12 ozs. drained weight. or	60 pieces per 12 ozs. drained weight. or ¹	60 pieces per 12 ozs. drained weight. or ¹
(b) More than 240 count per 12 ozs. drained weight.	15% by count of all units.	25% by count of all units. ¹	25% by count of all units. ¹
Ragged-cut units; and/or damage by mechanical injury (except in Sliced Lengthwise style).	5 total per 12 ozs. drained weight.	10 total per 12 ozs. drained weight.	No limits (but included in total allowance of 20% of drained weight).

¹ Determined as outlined in the standards of quality of canned green beans (21 CFR 51.11) and canned wax beans (21 CFR 51.16) promulgated under the Federal Food, Drug, and Cosmetic Act.

§ 52.454 Character.

(a) *General.* The factor of character refers to the maturity as reflected in the degree of development of pods and seeds and to the tenderness of the pods; to the degree of sloughing of the epidermis; and to the appearance of the slices and portions thereof in "Sliced Lengthwise" style.

(b) *Definitions.* (1) "Trimmed pod" means any pod from which there has been trimmed off as far as the end of the space formerly occupied by seed, any portion of the pod from which seed has become separated.

(2) "Tough strings" means strings or pieces of string at least $\frac{1}{2}$ inch in length which will support a $\frac{1}{2}$ pound weight for not less than 5 seconds.

(3) "Fibrous material" means the properly prepared, dried cellulose material obtained from deseeded pods, including strings, broken or unbroken.

(c) (A) *classification.* Canned beans that possess a good character may be given a score of 36 to 40 points. "Good character" means that:

(1) The beans are very young and tender in that the units are full-fleshed for the variety, are tender, and are not fibrous;

(2) The seeds are in the early stages of maturity;

(3) Not more than 5 percent, by count, of the units may possess tough strings;

(4) The beans are not materially affected in appearance by sloughing of the epidermis; and

(5) The beans, in "Sliced Lengthwise" style, are well sliced.

(d) (B) *classification*. If the canned beans possess a reasonably good character, a score of 32 to 35 points may be given. Canned beans that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). "Reasonably good character" means that:

(1) The beans are young and reasonably tender in that the units may have lost their fleshy structure to some extent and are practically free from fiber;

(2) The seeds may have passed the early stages of maturity and have not reached the late stages of maturity;

(3) Not more than 10 percent, by count, of the units may possess tough strings;

(4) The beans are not materially affected in appearance by sloughing of the epidermis; and

(5) The beans, in "Sliced Lengthwise" style, are reasonably well sliced.

(e) (C) *classification*. If the canned beans possess a fairly good character, a score of 28 to 31 points may be given. Canned beans that fall into this classification shall not be graded above U.S. Grade C, regardless of the total score for the product (this is a limiting rule) "Fairly good character" means that:

(1) The beans may be nearly mature but are fairly tender in that the units may have lost their fleshy structure to a considerable extent;

(2) The beans are not seriously affected in appearance by sloughing of the epidermis;

(3) The trimmed pods contain not more than 25 percent, by weight, of seed and pieces of seed;²

(4) The deseeded pods contain not more than 0.15 percent, by weight, of fibrous material;² and

(5) Not more than 20 percent, by count, of the units may possess tough strings except that in case there are present units at least $\frac{27}{64}$ inch or more in diameter, there are not more than 12 strings or pieces of string in 12 ounces, drained weight, which will support a $\frac{1}{2}$ pound weight for not less than 5 seconds;²

(f) (SStd.) *classification*. Canned beans that fail to meet the requirements of paragraph (e) of this section may be given a score of 0 to 27 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule); and may also be "Below Standard in Quality—Good Food—Not High Grade", for the following applicable reasons:

Excessive seed and pieces of seed in trimmed pods;

Excessive fibrous material in deseeded pods; and

Excessive tough strings.

LOT INSPECTION AND CERTIFICATION

§ 52.455 Ascertaining the grade of a lot.

The grade of a lot of canned green beans or canned wax beans covered by these standards is determined by the procedures set forth in the Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products Thereof, and Certain Other Processed Food Products (§§ 52.1 through 52.87).

² Determined as outlined in the standards of quality of canned green beans (21 CFR 51.11) and canned wax beans (21 CFR 51.16) promulgated under the Federal Food, Drug, and Cosmetic Act.

SCORE SHEET

§ 52.456 Score sheet for canned green beans or canned wax beans.

Container size.....	-----
Container code or marking.....	-----
Label.....	-----
Net weight (ounces).....	-----
Vacuum (inches).....	-----
Drained weight.....	-----
Type (round or flat).....	-----
Style.....	-----
Size.....	-----

Factors	Score points
Clearness of liquor	10 { (A) 9-10 (B) 8 (C) 7 (SStd) 10-6
Color.....	15 { (A) 14-15 (B) 12-13 (C) 10-11 (SStd) 10-9
Absence of defects	35 { (A) 31-35 (B) 28-30 (C) 25-27 (SStd) 10-24
Character	40 { (A) 36-40 (B) 32-35 (C) 28-31 (SStd) 10-27
Total score	100

Grade.....	-----
Normal flavor and odor.....	-----

¹ Indicates limiting rule.

² Indicates partial limiting rule (i.e., does not apply to damage from mechanical injury, such as, broken beans).

Effective date. The amendment to the U.S. Standards for Grades of Canned Green Beans and Canned Wax Beans (which is the seventh issue) contained in this subpart, shall become effective 30 days after publication hereof in the FEDERAL REGISTER.

Dated: January 10, 1972.

G. R. GRANGE,
Acting Administrator,
Consumer and Marketing Service.

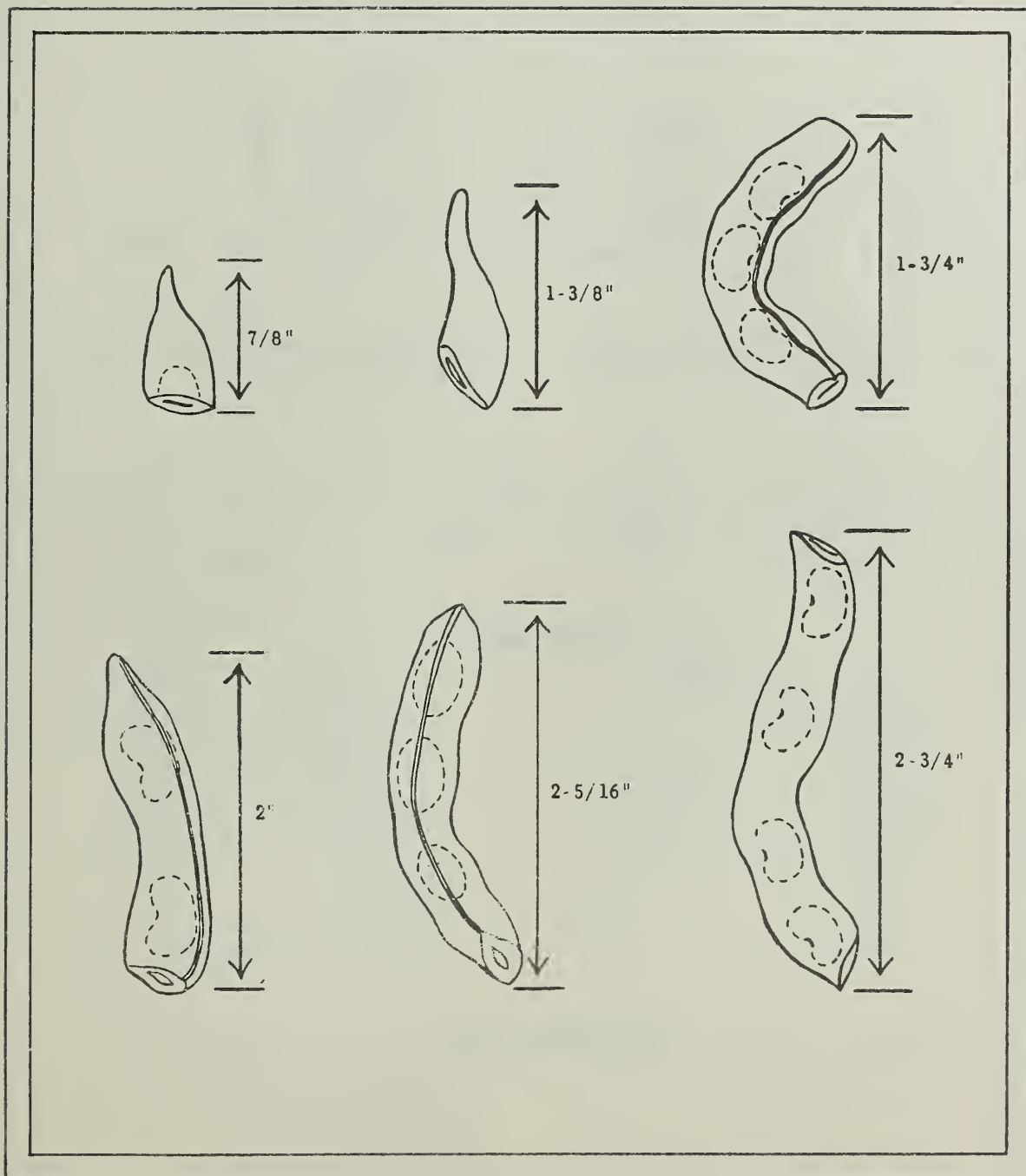
Recodified in the Federal Register of December 9, 1953 (18 F.R. 7929)

Section 52.454 amended May 22, 1957 (22 F.R. 3535)

Published in the Federal Register of June 22, 1961 (26 F.R. 5555)

Section 52.446, Table I, amended January 14, 1972 (37 F.R. 587)

ILLUSTRATION OF METHOD OF MEASURING LENGTH OF UNITS



ILLUSTRATIONS OF DETACHED STEMS, STEMMED UNITS, AND UNSTEMMED UNITS



DETACHED STEMS

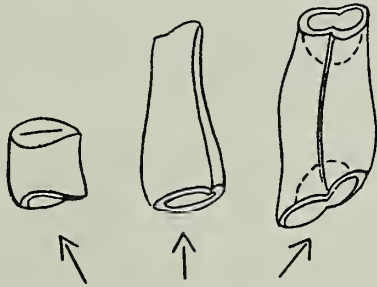


STEMMED UNITS

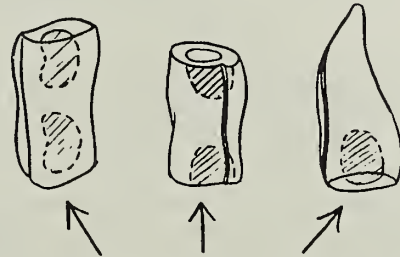


UNSTEMMED UNITS

**ILLUSTRATION OF METHOD OF TRIMMING PODS FOR DETERMINING PERCENT
 BY WEIGHT OF SEED AND PIECES OF SEED**

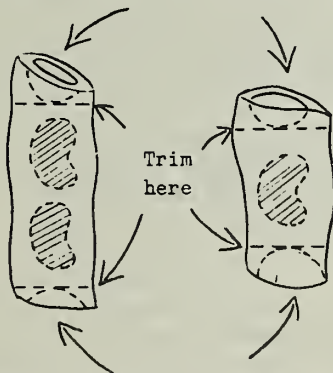


Pieces of pod containing seed or pieces of seed. Not used for seed pod ratio.



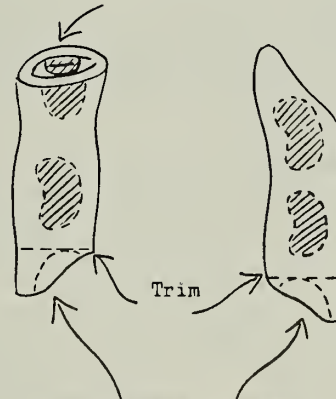
Use cut pods containing whole or pieces of seed remaining after cutting.

Empty space, no pieces of seed



Empty space, no pieces of seed.
 Trim as shown.

Do not trim



Empty space, no seed

EXCERPT FROM TITLE 21--FOOD AND DRUGS

CHAPTER 1--FOOD AND DRUG ADMINISTRATION, U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE; PART 51--CANNED VEGETABLES

Definitions and Standards of Identity; Quality; and Fill of Container

§ 51.10 *Canned green beans; identity; label statement of optional ingredients.*

(a) Canned green beans is the food prepared from stemmed, succulent pods of the green-bean plant, and water. It may be seasoned with salt, monosodium glutamate, sugar, or dextrose, or any two or all of these. The pods are prepared in one or more of the following forms:

(1) Whole pods, including pods which after removal of either or both ends are less than $2\frac{3}{4}$ inches in length, or transversely cut pods not less than $2\frac{3}{4}$ inches in length. There may be present such broken pieces of pods as normally occur in the commercial packing of such product.

(2) Pods sliced lengthwise.

(3) Pods cut transversely into pieces less than $2\frac{3}{4}$ inches in length but not less than $\frac{3}{4}$ inch in length, with or without shorter end pieces resulting therefrom.

(4) Pieces of pods of which not less than 75 percent by count are less than $\frac{3}{4}$ inch in length and not more than $1\frac{1}{4}$ inches in length.

Any such form is an optional ingredient. Mixtures of two or more optional ingredients may be used. The food is sealed in a container and so processed by heat as to prevent spoilage.

(b) (1) When optional ingredient specified in paragraph (a) (1) of this section is used the label shall bear the word "Whole." If the pods are packed parallel to the sides of the container the word "Whole" shall be preceded or followed by the words "Vertical Pack," except that when the pods are cut at both ends and are of substantially equal lengths, the words "Asparagus Style" may be used in lieu of the words "Vertical Pack."

(2) When optional ingredient specified in paragraph (a) (2) of this section

is used the label shall bear the words "Sliced Lengthwise" or "French Style."

(3) When optional ingredient specified in paragraph (a) (3) of this section is used the label shall bear the word "Cut" or "Cuts."

(4) When optional ingredient specified in paragraph (a) (4) of this section is used the label shall bear the words "Short Cut" or "Short Cuts" or "----- Inch Cut" or "----- Inch Cuts," the blank to be filled in with the fraction of an inch which denotes the approximate length of the pieces.

(5) When a mixture of two or more of the optional ingredients specified in paragraphs (a) (1) to (a) (4), inclusive, of this section, is used the label shall bear the statement "Mixture of -----," the blank to be filled in with the combination of the names "Whole," "Sliced Lengthwise," "Cut," or "Cuts," and "Short Cut" or "Short Cuts," designating the optional ingredients present, and arranged in the order of predominance, if any, by weight of such ingredients.

(6) If monosodium glutamate is used, the label shall bear the statement "Monosodium Glutamate Added" or "With Added Monosodium Glutamate."

(c) Wherever the name "Green Beans" appears on the label so conspicuously as to be easily seen under the customary conditions of purchase, the words and statements prescribed by paragraph (b) of this section shall immediately and conspicuously precede or follow such name, without intervening written, printed, or graphic matter, except that there may intervene (1) the designation of the length of cut, (2) the varietal name, which may include the word "Stringless," where the beans are in fact stringless, and (3) the description of the green beans as "Stringless," which may also be used between the words "Green" and "Beans," where the beans are in fact stringless.

§ 51.11 Canned green beans; quality; label statement of substandard quality.

(a) The standard of quality of canned green beans is as follows:

When tested by the method prescribed in paragraph (b) of this section:

(1) In the case of cut beans (§ 51.10 (a) (3)) and mixtures of two or more of the optional ingredients specified in § 51.10 (a) (1) to (a) (4), inclusive, not more than 60 units per 12 ounces drained weight are less than $\frac{1}{2}$ inch long; *Provided*, That where the number of units per 12 ounces drained weight exceed 240, not more than 25 percent by count of the total units are less than $\frac{1}{2}$ inch long.

(2) The trimmed pods contain not more than 25 percent by weight of seed and pieces of seed.

(3) In case there are present pods or pieces of pods $\frac{27}{64}$ inch or more in diameter, there are not more than 12 strings per 12 ounces of drained weight which will support $\frac{1}{2}$ pound for 5 seconds or longer.

(4) The deseeded pods contain not more than 0.15 percent by weight of fibrous material.

(5) There are not more than 8 percent by count of blemished units. A unit is considered blemished when the aggregate blemished area exceeds the area of a circle $\frac{1}{8}$ inch in diameter.

(6) There are not more than 6 unstemmed units per 12 ounces of drained weight.

(7) The combined weight of loose seed and pieces of seed is not more than 5 percent of the drained weight. This provision does not apply in case the green-bean ingredient is pods sliced lengthwise (§ 51.10 (a) (2)).

(8) The combined weight of leaves, detached stems, and other extraneous vegetable matter is not more than 0.6 ounce per 60 ounces drained weight.

(b) Canned green beans shall be tested by the following method to determine whether they meet the requirements of paragraph (a) of this section.

(1) Distribute the contents of the container over the meshes of a circular sieve which has been previously weighed. The diameter of the sieve is 8 inches if the quantity of the contents of the container is less than 3 pounds, and 12 inches if

such quantity is 3 pounds or more. The bottom of the sieve is woven-wire cloth which complies with the specifications for such cloth set forth under "2380 Micron (No. 8)" in Table I of "Standard Specifications for Sieves," published March 1, 1940, in L. C. 584 of the United States Department of Commerce, National Bureau of Standards. Without shifting the material on the sieve, so incline the sieve as to facilitate drainage. Two minutes from the time drainage begins, weigh the sieve and the drained material. Record, in ounces, the weight so found, less the weight of the sieve, as the drained weight.

(2) Pour the drained material from the sieve into a flat tray and spread it in a layer of fairly uniform thickness. Count the total number of units. For the purpose of this count, loose seed, pieces of seed, loose stems, and extraneous material are not to be included. Divide the number of units by the drained weight recorded in subparagraph (1) of this paragraph and multiply by 12 to obtain the number of units per 12 ounces drained weight.

(3) Examine the drained material in the tray, counting and recording the number of blemished units, number of unstemmed units, and, in case the material consists of the optional ingredient specified in § 51.10 (a) (3) or a mixture of two or more of the optional ingredients specified in § 51.10 (a) (1) to (4), inclusive, count and record the number of units which are less than $\frac{1}{2}$ inch long. If the number of units per 12 ounces is 240 or less, divide the number of units which are less than $\frac{1}{2}$ inch long by the drained weight recorded in subparagraph (1) of this paragraph and multiply by 12 to obtain the number of such units per 12 ounces drained weight. If the number of units per 12 ounces exceeds 240, divide the number of units less than $\frac{1}{2}$ inch long by the total number of units and multiply by 100 to determine the percentage by count of the total units which are less than $\frac{1}{2}$ inch long.

Divide the number of blemished units by the total number of units in the container and multiply by 100 to obtain the percentage by count of blemished units in the container.

Divide the number of unstemmed units by the drained weight recorded in subparagraph (1) of this paragraph and multiply by 12 to obtain the number of unstemmed units per 12 ounces of drained weight.

(4) Except in the case of pods sliced lengthwise, remove the loose seed and pieces of seed, weigh and record weight and return to tray. Divide the weight of loose seed and pieces of seed by the drained weight recorded in subparagraph (1) of this paragraph and multiply by 100 to obtain the percentage by weight of loose seed and pieces of seed in the drained material.

(5) Remove from the tray the extraneous vegetable material, weigh, record weight, and return to tray.

(6) Remove from the tray one or more representative samples of $3\frac{1}{2}$ to 4 ounces, covering each sample as taken to prevent evaporation. If the tray includes pods or pieces of pods $2\frac{7}{16}$ inch or more in diameter, weigh and record weight in ounces of each representative sample.

(7) From each representative sample selected in subparagraph (6) of this paragraph discard any loose seed and extraneous vegetable material and detach and discard any attached stems. Except with optional ingredient specified in § 51.10 (a) (2) (pods sliced lengthwise), trim off, as far as the end of the space formerly occupied by the seed, any portion of pods from which seed have become separated. Remove and discard any portions of seed from the trimmings and reserve the trimmings for subparagraph (9) of this paragraph. Weigh and record the weight of the trimmed pods. Deseed the trimmed pods and reserve the deseeded pods for subparagraph (9) of this paragraph. If the original container contained pods $2\frac{7}{16}$ inch or more in diameter, remove strings from the pods during the deseeding operation. Reserve these strings for testing as prescribed in subparagraph (8) of this paragraph. Collect the seed on a sieve of mesh fine enough to retain them, and so distribute them that any liquid drains away. Weigh the seed, divide by the weight of the trimmed pods, and multiply by 100 to obtain the percentage by weight of seed in the trimmed pods.

In the case of pods sliced lengthwise, remove seed and pieces of seed and reserve the deseeded pods for use as prescribed in subparagraph (9) of this paragraph.

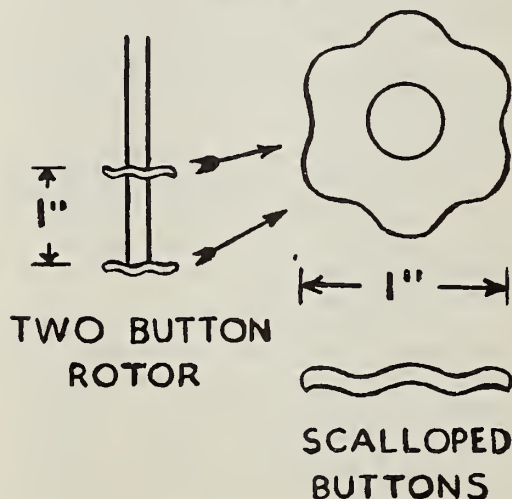
(8) If strings have been removed for testing, as prescribed in subparagraph (7) of this paragraph, test them as follows:

Fasten clamp, weighted to $\frac{1}{2}$ pound, to one end of the string, grasp the other end with the fingers (a cloth may be used to

aid in holding the string), and lift gently. Count the string as tough if it supports the $\frac{1}{2}$ -pound weight for at least 5 seconds. If the string breaks before 5 seconds, test such parts into which it breaks as are $\frac{1}{2}$ inch or more in length and if any such part of the string supports the $\frac{1}{2}$ -pound weight for at least 5 seconds count the string as tough. Divide the number of tough strings by the weight of the sample recorded in subparagraph (6) of this paragraph and multiply by 12 to obtain the number of tough strings per 12 ounces drained weight.

(9) Combine the deseeded pods with the trimmings reserved in subparagraph (7) of this paragraph, and, if strings were tested as prescribed in subparagraph (8) of this paragraph, add such strings, broken or unbroken. Weigh and record weight of combined material. Transfer to the metal cup of a malted-milk stirrer and mash with a pestle. Wash material adhering to the pestle back into cup with 200 cc. of boiling water. Bring mixture nearly to a boil, add 25 cc. of 50 percent (by weight) sodium hydroxide solution and bring to a boil. (If foaming is excessive, 1 cc. of capryl alcohol may be added.) Boil for 5 minutes, then stir for 5 minutes with a malted-milk stirrer capable of a no-load speed of at least 7200 r. p. m. Use a rotor with two scalloped buttons shaped as shown in the diagram in Exhibit 1.

EXHIBIT 1



Transfer the material from the cup to a previously weighed 30-mesh monel metal screen having a diameter of about $3\frac{1}{2}$ to 4 inches and side walls about 1 inch high, and wash fiber on the screen with a stream of water using a pressure

not exceeding a head (vertical distance between upper level of water and outlet of glass tube) of 60 inches, delivered through a glass tube 3 inches long and $\frac{1}{8}$ inch inside diameter inserted into a rubber tube of $\frac{1}{4}$ inch inside diameter. Wash the pulpy portion of the material through the screen and continue washing until the remaining fibrous material, moistened with phenolphthalein solution, does not show any red color after standing 5 minutes. Again wash to remove phenolphthalein. Dry the screen containing the fibrous material for 2 hours at 100° C., cool, weigh, and deduct weight of screen. Divide the weight of fibrous material by the weight of combined deseeded pods, trimmings, and strings and multiply by 100 to obtain the percentage of fibrous material.

(10) If the drained weight recorded in subparagraph (1) of this paragraph was less than 60 ounces, open and examine separately for extraneous material, as directed in subparagraph (5) of this paragraph, additional containers until a total of not less than 60 ounces of drained material is obtained. To determine the combined weight of extraneous vegetable material per 60 ounces of drained weight, total the weights of extraneous vegetable material found in all containers opened, divide this sum by the sum of the drained weights in these containers and multiply by 60.

(c) If the quality of the canned green beans falls below the standard of quality prescribed by paragraph (a) of this section, the label shall bear the general statement of substandard quality specified in § 10.3 (a) of this chapter, in the manner and form therein specified, but in lieu of the words prescribed for the second line inside the rectangle the following words may be used, when the quality of canned green beans falls below the standard in one only of the following respects:

(1) "Excessive Number Very Short Pieces," if the canned green beans fail to meet the requirements of paragraph (a) (1) of this section.

(2) "Excessive Number Blemished Units," if they fail to meet the requirements of paragraph (a) (5) of this section.

(3) "Excessive Number Unstemmed Units," if they fail to meet the requirements of paragraph (a) (6) of this section.

(4) "Excessive Foreign Material," if they fail to meet the requirement of paragraph (a) (8) of this section.

§ 51.15 *Canned wax beans; identity; label statement of optional ingredients.*
(a) Canned wax beans conforms to the definition and standard of identity, and is subject to the requirements for label statement of optional ingredients prescribed for canned green beans by § 51.10 (a) and (b), except that it is prepared from stemmed, succulent pods of the wax-bean plant.

(b) Wherever the name "Wax Beans" appears on the label so conspicuously as to be easily seen under the customary conditions of purchase, the words and statements prescribed by paragraph (a) of this section shall immediately and conspicuously precede or follow such name, without intervening written, printed, or graphic matter, except that there may intervene (1) the designation of the length of cut, (2) the varietal name, which may include the word "Stringless" where the beans are in fact stringless, and (3) the description of the wax beans as "Stringless," which may also be used between the words "Wax" and "Beans," where the beans are in fact stringless.

§ 51.16 *Canned wax beans; quality; label statement of substandard quality.*
(a) The standard of quality for canned wax beans is that prescribed for canned green beans by § 51.11 (a) and (b).

(b) If the quality of canned wax beans falls below the standard of quality prescribed by paragraph (a) of this section the label shall bear the statement of substandard quality in the manner and form specified in § 51.11 (c) for canned green beans.

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